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ABSTRACT OF THE DISCLOSURE

An image pickup apparatus of a radiological imaging apparatus includes a plurality of radiation detectors arranged in a ring form around a through hole section formed on a casing into which an examinee is inserted. An X-ray source unit having an X-ray source moves in a circumferential direction of the through hole section along a ring-shaped guide rail provided on the casing. Each radiation detector outputs both an X-ray detection signal which is a detection signal of X-rays that have passed through the examinee and a  $\gamma$ -ray detection signal which is a detection signal of  $\gamma$ -rays radiated from the examinee caused by radiopharmaceutical. A computer creates an X-ray computed tomographic image data based on the X-ray detection signal and a PET image data based on the  $\gamma$ -ray detection signal and creates fused tomographic image data using the X-ray computed tomographic image data and the PET image data.